

Remarks

Claims 1, 3-9, 11-21, 23-25, 28-31, 33, 35-41, 43-49, 51, 53-66, 69-78, 80-90, 92-93, and 95-96 are in the application. Claims 2, 10, 22, 26, 27, 32, 34, 42, 50, 52, 67, 68, 79, 91, 94 are cancelled. Claims 1, 33, 63, 65, 66, and 78, 102, 108 are in independent form. Claims 97-113 are new. Reconsideration is requested.

The Specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. The Examiner requires a definition of "computer readable medium. " Applicants note that a computer readable medium, as recited in the application as originally filed, refers to a medium that is readable by a computer and on which software components and data may be stored. In paragraphs [0038] and [0039] of the specification, an information apparatus is described as being:

... a computing device with processing capability. As illustrated in Fig. 1, examples of information apparatus 100 may include, but are not limited to, a desktop personal computer (PC), laptop computer, palmtop computer, handheld or mobile device, personal digital assistant (PDA), smart phone, screen phone, set-top box, e-book, Internet pad, digital camera, Internet appliance, pager, etc.

Information apparatus 100 may contain components (not shown) such as a processing unit, a memory unit, a storage unit and an input/output control unit, as are known in the art.

As is known in the art, the memory unit and storage unit of "a desktop personal computer (PC), laptop computer, palmtop computer, handheld or mobile device, personal digital assistant (PDA), smart phone, screen phone, set-top box, e-book, Internet pad, digital camera, Internet appliance, pager, etc." are computer readable media that may include optical or magnetic or electrical storage media such as CD-ROMs, DVDs, magnetic disks (hard or floppy), or electrical computer memories such as RAMs, ROMs, flash memories, etc. Applicants submit, therefore, that the term "computer-readable medium" recited in the claims in

known in the art and is supported in the specification. Applicant request that this objection be withdrawn.

Claims 1, 3-9, 11-21, 23-25, 28-31, 33, 35-41, 43-49, 51, 53-66, 69-78, 80-90, 92-93, and 95-96 are rejected under 35 U.S.C. 103(a) as being obvious over Yamamoto et al. [US 6,553,431; hereinafter Yamamoto] in view of Nykanen et al. [US 6,285,889; hereinafter Nykanen]. Applicants respond as follows.

Independent claims 1, 33, 63, 65, 66, and 78 have been amended to more clearly recite the radio wireless communication directly between a wireless mobile information apparatus and an output device or system. The amended claims also clarify that the wireless mobile information apparatus is not in wired communication with the recited output devices. For example, this aspect of the application is described in the application at paragraph [0099]:

Communication links 150 and 160 between information apparatus 100 with an output controller 120, whether externally connected and or internally integrated, may be variously implemented. In one implementation, information apparatus 100 communicates with output controller 120 through wireless connections such as infrared or radio links. Examples of wireless connections technology include without limitation IrDA, home RF, Bluetooth, IEEE 802.11, HiperLan2, among others. However, wired connections such as serial interfaces, parallel interfaces, USB interfaces, Fire Wire (IEEE 1394), Ethernet and token ring network among others may also be implemented in the present invention. Adapter pairs may be incorporated into each communicating node (e.g., information apparatus 100 and output controller 120) to conduct communications by performing signal conversions.

Yamamoto is directed to a multifunction device, such as one having a scanner that is connected to multiple output devices (e.g., copier machine with a scanner, printer, fax machine etc) in which all components are built-in, or hard-wired together. As noted by the Examiner, Yamada fails to teach a method in which the communication channel includes a wireless communication channel (Office action, page 3). The Examiner cites Nykanen as disclosing a radio

frequency wireless communication channel (col. 6, lines 9-50) and concludes that combining the two references would have been obvious.

Applicant notes that neither Yamamoto nor Nykanen teach or suggest establishing at the wireless mobile information apparatus a radio wireless communication channel directly between the wireless mobile information apparatus and the one or more output devices, the radio communication channel including a radio frequency wireless communication channel. Instead, Nykanen specifically describes a system in which a portable terminal device 10 can directly communicate with a computer 20 through a wired connection or a one-to-one (e.g. point-to-point) infrared connection:

Portable terminal device 10 is connected to local network 22 e.g. utilizing data transfer over infrared connection between infrared transceiver element 11 installed in portable terminal device 10 and an infrared transceiver element (not shown in the figure) installed in computer 20. (Nykanen, Col. 5, lines 38-42)

As is known by one skilled in the art, infrared communication does not operate in radio wireless frequency communication channel as recited in the independent claims.

Moreover, it is also known by one skilled in the art that infrared is a one-to-one or point-to-point form of communication. The communication described throughout Nykanen is directed to very specific, point-to-point communication that does not contemplate an information apparatus accessing plural output devices at the same time. The cited references fail to teach or suggest establishing communication between a wireless mobile information apparatus and one or more output devices. The integrated, hardwired structure of the Yamamoto multifunction output device provides only one output device, the multifunctional device, with no teaching or suggestion of a mobile wireless information apparatus accessing more than one such device.

Nykanen describes as an alternative to wired and infrared communication the use of a GSM radio connection for when "portable terminal device 10 is used

outside the office." The GSM radio connection uses a cellular telephone network and a base station 24 or mobile base station 28, a telephone network, and various other networks:

If portable terminal device 10 is used outside office, the outputting is carried out wirelessly using a radio connection. This is one of the most preferable fields of use of the invention. An example of a wireless data transfer method is the data channel of the GSM (Global System for Mobile Communications) mobile communication system prior known to a person skilled in the art. (Nykanen, Col. 6, lines 18-23)

Nykanen emphasizes that a portable terminal 10 communicate via GSM wireless radio with either a base station 24 or a mobile station 28, and not directly to the one or more output devices:

portable terminal device 10 opens a radio connection to base station 24, which is connected to telecommunication network 23. The connection from telecommunication network 23 to computer 21 is established over modem 26 using conventional telephone lines. It is evident to a person skilled in the art that establishing a connection from computer 21 to portable terminal device 10 takes place according to the same principle but in reversed order. (Nykanen, Col. 6, lines 31-38)

In this case it is possible to realize the data connection from portable terminal device 10 to mobile station 28 using e.g. the above mentioned data channel provided by the GSM-system. (Nykanen, Col. 6, lines 52-55).

In order to establish a data transfer connection from portable terminal device 10 through base station 24 and telecommunication network 23 to local network 22 it is prior known to arrange adapter 25 between telecommunication network 23 and local network 22. (Nykanen, Col. 6, lines 18-23)

The radio-based communication system of Nykanen is not directly between a wireless mobile information apparatus and an output device(s) or output system. Following the teachings of Nykanen would lead one skilled in the art away from a radio wireless communication channel directly between the wireless mobile information apparatus and the output system or output device(s) by implementing a GSM wireless communication channel that is connected directly to the base station 24 or mobile based station 28 and not directly to one

or more output devices or output system. Alternatively, Nykanen would lead one skilled in the art away by using a wired or infrared communication between portable device 10 and computer 20 instead of a direct radio communication channel including a radio frequency wireless communication channel between the wireless mobile information apparatus and the one or more output device or system.

As noted earlier, Yamamoto describes a multi-function copier machine in which all components are built-in or hard-wired together. Accordingly, neither Yamamoto nor Nykanen teach or suggest establishing at the wireless mobile information apparatus a radio wireless communication channel directly between the wireless mobile information apparatus and the one or more output devices or system, the direct radio communication channel including a radio frequency wireless communication channel. Applicant notes that this feature alone distinguishes each of the independent claims from the disclosure of Nykanen and Yamamoto.

Nonetheless, in addition to the above distinctions, independent claims have been further amended to specify that the output data is device-dependent. With reference to claim 1 as an example, the claims recite:

"receiving at the wireless mobile information apparatus over the radio wireless communication channel one or more device-dependent attributes corresponding to the one or more output devices; generating device-dependent output data from the data content based at least in part on the one or more attributes relating to the selected output device".

And with reference to claim 33 as an example:

"receiving at the wireless mobile information apparatus and over the direct radio wireless communication channel one or more components associated with the selected output device, the one or more components including at least a device-dependent attribute corresponding to the selected output device; conforming at the wireless mobile information apparatus the data content to device-dependent output data associated with the selected output device employing at least in part the one or more components".

For the claims recited as example, this aspect of the application is described in the application at paragraph [0024]:

Software components and objects may encapsulate for example code or executables of algorithms necessary for converting or encoding an image or document description or language into print data or output data compatible with a specific output device. The output manager may manage the process of uploading data and or software components from an output controller to an information apparatus in order to, for example, enable the information apparatus to generate and transmit print data or output data accurately to the output device or the output controller.

Furthermore, with reference to claim 1 as an example, the independent claims recite "generating device-dependent output data from the data content based at least in part on the one or more attributes relating to the selected output device." This feature is analogous to a feature recited in claim 26, for example, relating to conforming at the wireless mobile information apparatus the data content to device-dependent output data associated with the selected output device. In the rejection of claim 26 the Examiner states:

For claim 26, Yamamoto-Nykanen teaches, the method of claim 1 further including conforming at the wireless mobile information apparatus the data content to an output data format compatible with the one or more selected output devices before delivering the data content to the one or more selected output devices for rendering. (Yamamoto, Col. 10 lines 12-31) and (Nykanen, Col. 5 lines 53-67, selecting printer, Col. 6 lines 9-50, radio) The same motivation that was utilized in the rejection of claim 1, applies equally as well to claim 26.

Applicant submits, however, that the references fail to teach or suggest the subject matter of claim 26 or that of the amended independent claims.

Nykanen did not describe or suggest transferring device-dependent output data. Instead, Nykanen describes and teaches the opposite by transferring format-independent data or device-independent data as follows:

Now an information outputting system utilizing a data transfer format independent of an application and an output device, and a telecommunication terminal devices have been invented, with which the above mentioned problems can be reduced. (Nykanen, Col. 3, lines 4-7)

Because the application-independent data transfer format used in connection with the data outputting system according to the invention is also hardware-independent, the one and same transfer program can preferably be used in all for outputting suitable fixed devices and networks, independent of the printer drivers or other drivers of the output devices and independent of the types of output devices. (Nykanen, Col. 3, lines 66)

The passage of Nykanen cited by the Examiner in the rejection further states:

In the information output system according to the invention utilizing application-independent data transfer format 44, portable terminal device 10 need preferably not know the types of printers 31, 33 connected to local network 22 nor the types of personal printers 30, 32 connected to computers 20, 21. For this reason no printer drivers are needed in portable terminal device 10 and the settings of portable terminal device 10 need not be changed while selecting printer 30, 31, 32, 33. (Nykanen, Col. 5, lines 54-62)

Nykanen does not teach or describe receiving at the wireless mobile information apparatus over a radio communication channel one or more device-dependent attributes corresponding to the one or more output devices. Instead, Nykanen emphasizes the opposite in that the "portable terminal device 10 need preferably not know the types of printers 31, 33 connected to local network 22 nor the types of personal printers 30, 32 connected to computers 20, 21." Moreover, "the settings of portable terminal device 10 need not be changed while selecting printer 30, 31, 32, 33."

Nykanen does not describe or teach a radio wireless communication channel directly between the wireless mobile information apparatus and the one or more output devices. Instead, Nykanen describes that portable terminal device 10 is connected to local network 22 through computer 20 for accessing printer 31 and 33 as follows:

When portable terminal device 10 is connected to local network 22 through computer 20, all printers 31, 33 connected to local network 22 are available for portable terminal device 10. (Nykanen, Col. 5, lines 44-47)

Nykanen does not describe or suggest selecting at the wireless mobile information apparatus a selected output device from one or more output devices. Instead, Nykanen emphasizes that the selection is executed in computer 20 and not on the portable terminal device 10 as follows:

The printer selection is executed in computer 20 connected to the local network, in which computer 20 the selection is carried out by data transfer program 55 (see FIGS. 3A and 3B) installed in computer 20. (Nykanen, Col. 5 line 62-65)

If for example a video monitor or a video projector is used as a output device instead of a printer, the settings are made in a similar manner under the control of computer 20 independently of the portable terminal device 10. (Nykanen, Col. 6, lines 1-5)

Nykanen does not describe or suggest generating a device-dependent output data from the data content based at least in part on the one or more attributes relating to the selected output device. Instead, Nykanen teaches the opposite by generating device-independent format by a format generator located in the portable device as follows:

An essential component of the data transfer system according to the invention utilizing application-independent data transfer format 44 is format generator 42. (Nykanen, Col. 7, lines 11-13)

Format generator 42 converts data 48 in original format characteristic of application 40 into format 44 which is independent of application 40, which

is here also called independent format 44 for shortness. (Nykanen, Col. 7, lines 20-23)

Examiner cites the following passage as being related to generating device-dependent output data from the data content:

In many cases format generator 42 is not capable of converting data 48 specific to application 40 directly to application-independent format 44. This is due to the fact that most computer programs use for data saving a format specific of the application (proprietary), which format other computer programs cannot decode. In this case application 40 first carries out the conversion of data 48 specific of application 40 into a form suitable for format generator 42, and processor 60 forwards the data to format generator 42. (Nykanen, Col. 8. lines 4-12)

Applicant submits that Nykanen does not describe nor teach generating device-dependent output data and delivering the device dependent output data to the selected output device or system, instead format generator 42 generates device-independent data. Moreover, format generator 42 and application 40 are located in the portable terminal 10 and not in the output device or output system. "processor 60 forwards the data to format generator 42" located in the portable terminal 10 which is not forwarding data from the portable terminal to the selected output device or output system. Accordingly, Nykanen does not describe nor teach transferring the device-dependent output data over the radio communication channel directly from the wireless mobile information apparatus to the selected output device for rendering, as indicated in the above and following passages and also shown in Fig 2B of Nykanen.

It is possible to realize it e.g. utilizing a program stored in memory 41 of portable terminal device 10, which program is executed by processor 60. Format generator program 42 can be built-in in portable terminal device 10, but preferably it can also be installed afterward e.g. from a diskette, if the operating system of portable terminal device 10 and the structural realization facilitate it. (Nykanen, Col. 7, lines 13-19)

Accordingly, rather than conforming data content to a device-dependent output data or generating device-dependent output data for a selected output

device, as recited in the independent claims, Nykanen leads one skilled in the art in the opposite direction by forming an application-independent and device-independent data 44. Nykanen emphasize the teaching of NOT conforming device-dependent output data to an output device or generate device-dependent output data for a selected output device as recited in the independent claims. With explicit teaching by Nykanen to do the opposite, applicants submit that the cited reference do not teach or suggest the claimed subject matter.

Yamamoto describes a subject matter directed to a multifunction device, such as a copier having a scanner, an LCD panel, and multiple output devices (e.g. printer) in which all components are built-in, or hard-wired together as follows.

In the multifunctional system, an image scanner 1 which acts as an input device to read image data, plural (i.e., first and second) laser beam printers 2 and 3 which act as output devices to output the image data, a host computer 4 which acts as an information processing device, and a file server 5 which integrally manages a later-described device profile and the like are connected to a LAN (local area network) 6 through a not-shown LAN interface such as an Ethernet interface (e.g., 10BASE-2) having a coaxial cable. [Yamamoto, Col. 6 line 33-44]

Yamamoto teaches forming a device profile by user input via the scanner's console panel of the multifunctional device as follows:

Initially, in a step S1, the device profile as shown in FIG. 7 is formed on the basis of the various data input by the handling of the console panel 9. [Yamamoto, Col. 9, lines 4-6]

Further, the user sequentially inputs various data as shown in FIG. 7 to form the device profile. The formed device profile is temporarily stored in the scanner RAM 18. [Yamamoto, Col. 9, lines 16-19]

Yamamoto further teaches that after forming the device profile, the device profile is transmitted to file server 5 and stored in recording device 7 as follows:

Subsequently, in a step S2, in order to confirm the device profile previously set when the device information was changed, the device

profile acquirement instruction of own device (i.e., image scanner 1) is transmitted to the file server 5. [Yamamoto, Col. 9, 20-24]

The file server 5 which received the device profile writes it into the recording device 7. [Yamamoto, Col. 9, lines 40-42]

Yamamoto does not describe nor teach receiving at the wireless mobile information apparatus over the radio communication channel one or more attributes corresponding to the one or more output devices. Instead, Yamamoto describes that the output device profile is acquired from server 5 and not from the output device as follows:

It will be explained a case where the device profiles of the input and output devices are acquired from the file server 5. [Yamamoto, Col. 9, lines 61-62]

Subsequently, in the step S15, an output-side device profile acquirement demand instruction to demand to acquire the device profile of the output device is transmitted to the file server 5 through the LAN 6. Then it is judged in a step S16 whether or not the file server 5 responds to the instruction in a certain time. [Yamamoto, Col. 10, lines 12-17]

Yamamoto does not describe nor teach selecting at the wireless mobile information apparatus a selected output device from the one or more output devices as recited in claim 1 as an example. Instead, Yamamoto teaches that if the demand to the file server 5 to acquire the output device profile is satisfied, then judged whether the input device profile and the output device profile are "coincident with those of the input-side device profile" as follows and cited by the Examiner:

If judged that the server 5 responds, the flow advances to a subsequent step S17 to search for the output-side device profile capable of performing data output in the acquired output-side device profiles, on the basis of the contents of the acquired input-side device profile. That is, it is judged whether or not the output device which has the output-side device profile of which transfer protocol and data format are coincident with those of the input-side device profile exists. [Yamamoto, Col. 10, lines 17-25]

Yamamoto concretely emphasizes that matching the pair of input and output profile is accomplished by user "selecting" the pair of input and output device profiles as follows:

Concretely, the user handles the pointing device on the display screen of the CRT 34 by using a GUI (graphical user interface) to select the pair of the device profiles. [Yamamoto, Col. 10, lines 37-39]

Applicant submits that the above passages cited by the examiner do not describe nor teach selecting at the wireless mobile information apparatus a selected output device from the one or more output devices.

Yamamoto does not describe nor teach generating or conforming a device-dependent output data from the data content based at least in part on the one or more attributes relating to the one or more output devices or output system. Yamamoto is silent regarding generating or conforming device-dependent output data from data content. Instead, Yamamoto describes transmitting directly the input image (e.g. data content and not the conformed output data) from the scanner RAM 15 (Fig 2) to the output device as follows:

An another object of the present invention is to provide an information processing system and an information processing method executed in this system, in which an arbitrary output device is selected from an input device and input data is transmitted to the selected output device and subjected to output processing. [Yamamoto, Col. 2, lines 54-59]

Subsequently, it will be explained an image processing method in which the image data is transmitted from the image scanner 1 to the first and second laser beam printers 2 and 3. [Yamamoto, Col. 11, lines 46-49]

After then, in a step S41, the image data previously stored in the RAM 15 or the external storage device is directly transferred through the LAN 6 to the output device. [Yamamoto, Col. 12, lines 35-37]

Yamamoto teaches the transmission of the image data directly from the scanner to the output device. Yamamoto does not describe or teach transmission to the output device(s) conformed output data from data content or generated output data from data content:

In the transmission procedure as above, it is possible to directly transfer the image data from the image scanner 1 to the first and second laser beam printers 2 and 3 without passing the data through the host computer 4 when the data is transferred. Therefore, since it is unnecessary for the host computer 4 to temporarily store the numerous image data, it is unnecessary to install a high-performance CPU, a large-capacity memory or a high-speed accessible memory in the host computer. Thus, it is possible to perform the high-speed processing of the image data at low cost. [Yamamoto, Col. 12, lines 54-63]

In the absence of any teaching in Yamamoto to conform the data content to a device-dependent output data or generating device-dependent output data from the data content for a selected output device or system, applicant submits that the cited references do not teach or suggest the claimed subject matter.

In addition to the numerous distinctions between the cited references and the claims described above, independent claim 66 has been further amended to recite "discovering the selected output system via radio wireless discovery." Applicant notes that neither Yamamoto nor Nykanen disclose or teach the additional discovery of a selected output system or one or more output devices via radio wireless discovery. More specifically, the hard-wired multi-function device of Yamamoto and the point-to-point connection used by Nykanen would both lead one skilled in the art away from employing the discovery of a selected output system or one or more output devices via radio wireless discovery. Applicant submits, therefore, that claim 66 is further

Added new claims 102-113 are directed to an information apparatus, as described throughout the application and referenced in the other claims. Added new claims 102-113 include distinctions from the cited art, as described hereinabove in reference to other claims

Applicant believes the application is in condition for allowance and respectfully request the same.

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Respectfully Submitted,

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